

REMARKS

Claims 3-7 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Nakabayashi et al. (United States Patent No. 6,379,017) in view of Umemoto et al. (United States Patent No. 6,366,409). Claims 9 and 13-16 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Nakabayashi et al. in view of Umemoto et al. and further in view of Miura et al. (United States Patent No. 6,693,619). Claim 10 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Nakabayashi et al. in view of Umemoto et al. and further in view of Koike et al. (United States Patent No. 5,659,410). Claim 12 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Nakabayashi et al. in view of Umemoto et al. and further in view of Yamada et al. (United States Patent No. 5,704,703). Claim 17 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Nakabayashi et al. in view of Umemoto et al. and further in view of Miura et al. and further in view of Takemoto (United States Patent No. 6,417,833). Claim 18 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Nakabayashi et al. in view of Kashima et al. (United States Patent No. 5,735,590). Claim 19 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Nakabayashi et al. in view of Umemoto et al. and further in view of Lin (United States Patent Application Publication No. 2003/0184990). Applicants have cancelled Claims 3-7, 9, 10 and 12-19, without prejudice, thereby rendering these rejections moot.

Additionally, Applicants have added new Claims 20-23, as indicated above. Applicants respectfully submit that new independent Claim 20 and associated dependent Claims 21-23 are allowable over the references of record because the cited references, alone

or in combination, fail to disclose or suggest all of the features of new independent Claim 20. More specifically, Applicants respectfully submit that the cited references fail to disclose or suggest a liquid crystal display device that includes, *inter alia*, a light source device “for illuminating the liquid crystal display from a back side thereof” (emphasis added), a light guide plate that has “a curved reflecting surface,” and a “light scattering element formed on the reflecting surface,” as recited in independent Claim 20.

Applicants’ Figure 1 shows a basic configuration of the liquid crystal device defined in new independent Claim 20, and Applicants’ Figures 7 and 8 show two embodiments of the backlight unit 41 that includes the light guide plate 42 of the liquid crystal display device defined in new independent Claim 20. As can be seen in Figure 1, the liquid crystal device includes a light source device 40, for illuminating the liquid crystal display panel 30 from a back side thereof, and that light source device includes a light guide plate 42, such as shown in either Figure 7 or in Figure 8. Further, Figures 7 and 8 shows two embodiments of light guide plate 42 that both have a planar exit surface 90 provided in the liquid crystal display panel side, a curved reflecting surface 92 that is opposite to the light exit surface 90 and that is formed so that the thickness of the light guide plate 42 is smaller at both end faces and becomes greater in a central part thereof, and a light scattering element formed on the reflecting surface 92 (such as by fine irregularities, as in Figure 7, or by screen printing a scattering layer 62, as in Figure 8).

In contrast to the liquid crystal display device defined in independent Claim 20, the illuminating system disclosed in Nakabayashi et al. is an illuminating system that

illuminates a liquid crystal display from a front side thereof, which is exactly the opposite of the light source device of Claim 20, which illuminates the liquid crystal display panel “from a back side thereof” (emphasis added). Thus, for at least this reason, Applicants respectfully submit that independent Claim 20 and associated dependent Claims 21-23 are patentable over the Nakabayashi et al. reference, even if this reference is combined with other references of record.

The light guide plate recited in new independent Claim 20 has several benefits over the device of Nakabayashi et al. For example, the light guide plate of Claim 20 is superior in its converging effect when compared with the light guide plate 203/203 of Figure 23C of Nakabayashi et al. because the claimed light guide plate has a “curved reflecting surface that is opposite to the light exit surface and that is formed so that the thickness of the light guide plate becomes greater in a central part thereof.” Thus, with these features, the light guide plate of Claim 20 can effectively converge the light to the liquid crystal display panel side. Further, since the light guide member of Nakabayashi et al. includes angled sections, shadows of the ridge lines are easily generated. In contrast, in the device of Claim 20, shadows are not generated due to the configuration of the claimed “curved reflecting surface that is opposite to the light exit surface and that is formed so that the thickness of the light guide plate becomes greater in a central part thereof.” Thus, the device of Claim 20 is superior in display qualities to that of Nakabayashi et al.

Second, Applicants respectfully submit that the device of Nakabayashi et al. also fails to include a light scattering element formed on the reflecting surface, as also

defined in independent Claim 20. Without such a light scattering element, light is not effectively irradiated to the liquid crystal display panel side, when using the device of Nakabayashi et al. Moreover, even assuming *arguendo* that such a light scattering element could be added to Nakabayashi et al., it would be provided on the observer side (i.e., the front side) of the liquid crystal display panel. Consequently, the observer would have trouble seeing images displayed in the display screen due to the light scattering element. In contrast, the light scattering element of Claim 20 is provided on the back side of the liquid crystal display panel. Consequently, the problem that the observer has trouble seeing images due to the light scattering element does not occur, and it is possible to provide images of high quality with uniform luminance, in the device of Claim 20. Thus, for at least these additional reasons, Applicants respectfully submit that Claim 20 and associated dependent Claims 21-23 are patentable over the Nakabayashi et al. reference.

Third, Applicants respectfully submit that the Nakabayashi et al. reference fails to disclose or suggest the claimed light guide plate that has a “curved reflecting surface,” as recited in independent Claim 20. In previous communications from the Examiner, he has asserted that the middle portion of Figure 23C shows such a curved surface. However, Applicants respectfully disagree. More specifically, column 22, lines 4-24 disclose how Figure 23C is formed by attaching two light guide members 203 (of Figure 23A) together. As can be seen in Figure 23A, surfaces 243 are flat, and the specification of Nakabayashi et al. even names the surfaces “flat portions 243.” *See e.g.*, Nakabayashi et al., col. 20, lines 19-20. Thus, as two flat surfaces do not somehow become curved when combined, Applicants

Applicants respectfully submit that the Examiner has erred in interpreting Figure 23C as including the claimed “curved reflecting surface.”

In the Advisory Action, the Examiner also referred to Figure 18 of Nakabayashi et al. as showing a curved surface. As mentioned in Amendment E, on page 8 (lines 16-19), light guiding member 30 of Figure 18 includes “stepwise slopes 131” (Nakabayashi et al., col. 11, lines 26-27), which are not curved, but are instead stepped. As also mentioned in the same portion of Amendment E, it is the complementary plate 6C, and not the light guiding member 30, that appears to be curved. However, even assuming *arguendo* that the upper surface of light guiding member 30 of Figure 18 of Nakabayashi et al. is curved, the upper surface is not a reflecting surface, as defined in Claim 20, but is instead the light exit surface. Thus for at least these additional reasons, Applicants respectfully submit that the independent Claim 20 and associated dependent Claims 21-23 are patentable over the Nakabayashi et al. reference, even if this reference is combined with other references of record.

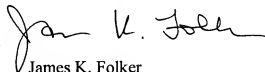
For all of the above reasons, Applicants request reconsideration and allowance of the claimed invention. The Examiner should contact Applicants’ undersigned attorney if a telephone conference would expedite prosecution.

If a Petition under 37 C.F.R. §1.136(a) for an extension of time for response is required to make the attached response timely, it is hereby petitioned under 37 C.F.R. §1.136(a) for an extension of time for response in the above-identified application for the period required to make the attached response timely. The Commissioner is hereby authorized to charge any additional fees which may be required to this Application under 37 C.F.R. §§1.16-1.17, or credit any overpayment, to Deposit Account No. 07-2069.

Respectfully submitted,

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